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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,281	11/19/2003	Teruhiko Nawata	1217-032245	7413

28289 7590 09/24/2007  
THE WEBB LAW FIRM, P.C.  
700 KOPPERS BUILDING  
436 SEVENTH AVENUE  
PITTSBURGH, PA 15219

EXAMINER
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NGUYEN, NGOC YEN M

ART UNIT	PAPER NUMBER
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1754

MAIL DATE	DELIVERY MODE
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09/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/717,281	<b>Applicant(s)</b> NAWATA ET AL.	
	<b>Examiner</b> Ngoc-Yen M. Nguyen	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 11-021,197.

JP '197 discloses a process for producing fluoride single crystal (note title). The fluoride single crystal is formed by Czochralski method using a seed crystal (note paragraph 0011). The fluoride can be calcium fluoride, barium fluoride or magnesium fluoride (note paragraph 0012). The seed crystal can have the main crystal growth plane in the {111} or {100} plane (note paragraph 0010). The single crystal can have a diameter of 25 cm and a thickness of 50 mm (note paragraph 0090).

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In the process of JP '197 the pulling rate is 0.5 to 1 mm/hr (note paragraph 0103) and the apparatus used in JP '197 has a means 302 to prevent the heat from the heater 303 from going up (just as the lid 14 in the claimed invention, note instant specification, page 20, lines 1-3).

Since the process of JP '197 uses a slow pulling rate, which is well within the rate used in the claimed invention (i.e., less than 4 mm/hr, note instant specification, page 14, lines 12-21) and has a means to prevent the heat from the heater from going up as discussed above, the as-grown single crystal product of JP '197 would inherently have the same light transmittance as that of the claimed product.

The product of JP '197 is subjected to an anneal treatment (note paragraph [0052] or [0090]).

The product of JP '197 anticipates the claimed product.

Alternatively, the process limitations of "as grown" in claims 1-14 are noted. However, when the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

Applicant's arguments and declaration filed June 25, 2007 have been fully considered but they are not persuasive.

The rejections over Li, Sakuma and Garibin are withdrawn in view of the Declaration filed June 25, 2007. The Declaration shows that calcium fluoride which was

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produced by Bridgeman-Stockburger method would not have a light transmittance at a wavelength of 682.8 nm within the claimed range even when a high-purity graphite crucible was used and that heat treatment would not improve the light transmittance.

Applicants argue that for JP '197, annealing does not improve light transmittance of a crystal.

Firstly, the crystal produced by JP '197, before the annealing step, appears to inherently have the same light transmittance as the claimed product because of the reasons as stated in the above rejection, namely, same pulling rate and same means to prevent heat from going up. Applicants have not provided any evidence to show that the product of JP '197 would not have the same light transmittance. It is noted that in Comparative Experiment II of the Declaration filed June 25, 2007, the barrier 13 (i.e. the lid) was not used, whereas in JP '197, the heat insulating material (302) does have the "lid" portion, thus, the Comparative Experiment II does not compare the claimed invention to the closest prior art. In the event the "as-grown" crystal of JP '197 does not inherently have the same light transmittance, it can be subjected to annealing which is known in the art to improve the light transmittance. In the Declaration, it is shown that heat treatment does not improve the light transmittance for calcium fluoride crystal which was formed by Bridgeman-Stockburger method, not for the crystal which was formed by the pulling method (Czochralski method).

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on a Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
September 17, 2007